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A participatory risk assessment and sustainable use framework for maritime cultural heritage

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1 Executive summary

This deliverable, D4.4, describes the "participatory framework for sustainable management, conservation and use of European coastal and maritime cultural landscapes" of the PERICLES project. It is the final deliverable for WP4, based on the four tasks carried out in this and other work packages. It brings together a synthesis of information already communicated in other reports (e.g. D4.1; D4.2; D4.3), and examples from the PERICLES case regions. In doing so, this deliverable presents the PERICLES participatory framework as practice-informed approach to understand, assess and enact sustainable management, conservation and use of European coastal and maritime cultural landscapes.

In the PERICLES participatory risk assessment framework, defining risks and threats is seen as an important starting point because this enables clearer communication and therefore to create a common understanding among those stakeholders who are affected by threats, and those who are affecting and governing risks to coastal and maritime cultural heritage. In the PERICLES project, a distinction is made between natural/environmental and human-induced threats as captured in the first phase of the framework. At the same time, it is highlighted that such distinction can be artificial and should be considered with care, as represented in the two-layered design of the framework. Every step goes with questions for reflection for those using the framework, and the iterative loops contained within it. Governance, is seen as a process of steering at a strategic level in which a variety of actors can be involved yet not affected, can be affected yet marginalized or excluded, or anything in between. Risk management takes place at the more operational level but the power dynamics of a governance process are still important. As such the second phase of the risk assessment framework seeks to suggest participatory ways to assess, decide and evaluate risks.

PERICLES partners had the ambition to test the framework in demo-specific risk assessment processes in the PERICLES case regions. This testing was planned at the case-region level between January 2020 and January 2021. However, due to pandemic related restriction (ban of meetings and curfews) it proved to be impossible to realise the testing and implementing of the framework in the way envisioned. As an alternative approach, PERICLES partners have looked at their demo work through the lens of the assessment framework and discussed this in four joint sessions. This led to enhanced, practice-informed insights on how the different steps worked out in several specific case regions. Furthermore, the partners jointly reflected on the impact of COVID-19 on their own participatory strategies. It has been clear that the pandemic has hampered participation in demo activities and has also brought some to a stand-still. Mitigating measures were mainly through online activities, which allowed for opening up to new audiences but also brought forward forms of exclusion because of a digital divide.

2 Introduction

Europe's coastal zones are under intense environmental and anthropogenic pressures representing potential risks for their conservation and the preservation of coastal and maritime cultural heritage (CMCH). This report (D4.4 of the PERICLES project) provides guidelines to define threats, anthropic and natural, and to suggest different means by which participatory governance can put in practice. The aim is to help those who are interested in giving voice to communities or civil society actors, particularly those who have until now been excluded or marginalized in the process of identification of CMCH and risks to it.

The point of departure is recognizing that coastal population growth, urbanisation and expanding coastal tourism and development, increasingly puts increasingly on coastal environments, resulting in ecosystem degradation and the loss of associated CMCH. Environmental change is also increasingly manifest in the type of quality of fish stocks available for exploitation. However, throughout history, coastal communities have responded to outside forces such as external market and trade, globalisation, environmental changes, politics and governmental policies, though the rise of fall of states, economies and institutions, revealing an ability of the peoples of coastal and maritime areas to be resilient and adaptive.

In dealing with risks, challenges and opportunities, management of cultural heritage has shifted from government and expert led decision making to more participatory forms of governance. Participation is deemed central to the good governance of CMCH and landscapes in coastal areas, particularly in regard to engagement of local communities who live in/with CMCH. These communities are the first to be affected by risks and challenges as their identities and livelihoods are formed by cultural heritage. In addition, integrating knowledge, values and perspectives in assessing risks and exploring opportunities improves decision making processes. Participatory governance can be linked to enhanced deliberation (and social learning), going beyond “voices being heard” to establish processes of social exchanges and trust building. Deliberative modes of governance put emphasis on communication, exchanging, viewpoints, and formulating common understanding and objectives.

The framework, as it is developed by the PERICLES partners, emphasizes the participatory nature of conducting a risk assessment in the context of managing CMCH. In the risk assessment framework, a two-layer design is applied, the first provides examples of methods and tools that facilitate participation of stakeholders throughout the assessment process. The second layer refers to understanding risk assessment as a social process, which is far more dynamic than a systematic, step-by-step process can capture.

This report presents the participatory framework for sustainable management, conservation and use of European coastal and maritime cultural landscapes as designed by the PERICLES partners. The framework presented here is based on the draft framework (D4.3) which has been further developed. However, the way in which this has been done, has been changed due to the current COVID-19 reality. So, before presenting the framework, we first describe the adaptation of our working method (Section 3). Then, we present how risks, mitigation strategies for CMCH conservation and deliberative and participatory governance are identified in Section 4, which represents the main results of the scoping literature review. The PERICLES risk assessment framework is presented in Section 5, along with reflection of the use of the framework by PERICLES partners in the case regions. We conclude with a reflection on COVID-19 as a risk to research projects conducted by social scientists, by looking into our own lessons within PERICLES through a risk assessment lense (Section 6).

3 Change in method due to COVID-19

The framework presented in this report is based on the task work in multiple WPs, yet predominantly on WP4. In D4.3, we presented a draft framework which was mostly theory-informed, and its application had to be tested in demo-specific risk assessment processes in the PERICLES case regions. This testing was planned at the case-region level between January 2020 and January 2021. However, due to the pandemic restrictions (e.g. banned meetings and curfews) it proved to be impossible to plan the testing and implementing of the framework in the way envisioned. In autumn 2020, the partners agreed that it was necessary to adapt their working method to the new context. A working group, called the Risk Assessment Team, representing all partners was established. This group met through online meetings. Two cases studies were presented and were jointly discussed. The first case was Seaweed Harvesting (know how) from the North Finistère area in France and the second case was Blue Growth and CMCH in Galway Ireland. Following each presentation, participants/experts discussed and reflected on how different phases and steps of the framework were implemented and worked in each case study with the objective of improving the framework. A third working group meeting was organised to discuss COVID 19 risk and PERICLES work at case region level and our adaptation strategies. The deliverable leaders (UBO and WU) prepared a specific questionnaire and template (see annex1) which was distributed to all members of the group to gather information from the partners to be used in this report. This information is integrated in the framework, presented in Section 6.

4 Key definitions to guide risk assessment and sustainable management of CMCH

The many and varied components of CH face different types of threats, which complicates finding means and ways to move forward to sustainable management and use of CH. Providing an overview of threats, as well as defining these threats, enables clearer communication and to create a common understanding among those affected, affecting and governing. Within WP4 (task 4.1), a scoping review of academic literature (articles, reports and monographs) was carried out to support the definition and the identification of major risks and threats to cultural heritage (CH), management strategies to mitigate risks and risk management relevant to tangible and intangible maritime assets. Also, a review (task 2.5) about participatory and deliberative governance was conducted which helps to indicate how threats are linked to, or incorporated in management approaches. This provides the foundation for achieving the main objective of WP4, that is the realisation of participatory framework for risks assessment (presented in section 5). In the following sub-sections, the main aspects coming out of the two reviews are presented, thereby providing key definitions which can guide risk assessments and sustainable management of coastal and maritime cultural heritage.

4.1 *Definition of threats to cultural heritage*

Two main types of threats to CMCH identified are environmental and natural threats (climate change, Natural disasters, environmental) and human threats (the cultural economy; conflicts, colonialism, mismanagement, development pressures, and the regulatory environment).

The definition of threats to CMCH are events or phenomena that could result in damage or irrecoverable loss. Damage is often irreversible and can have broader economic, political, cultural and social effects (World Bank, 2017). Threats can emerge from sudden loss due to a catastrophic event or involve gradual deterioration from cumulative processes (Michalski and Pedersoli, 2016), and can be meteorological, hydrological, geological, biological, astrophysical, human-induced, or the result of climate change (UNESCO, 2010).

Within PERICLES, we argue that the inclusion of intangible heritage in the list of threatened heritage is relevant. However, many authors define cultural heritage CH in purely material forms as the “physical manifestation of past human activities” (Forino et al., 2016). However, intangible cultural heritage, also viewed as ‘local’ or ‘traditional knowledge’, depends on community capacities and a willingness to highlight its vulnerability (Wilson and Ballard, 2017). In this case, one way to ensure the viability of ‘know-how’ aspects of intangible heritage is to allow its active and sustainable use and how this, in turn, should enable its reproduction as a viable and serviceable local asset (Wilson and Ballard, 2017; World Bank, 2017). For example, the use of inappropriate materials to repair building fabric, which then exacerbates deterioration can be avoided if traditional knowledge is built into conservation and restoration processes (Haugen and Mattsson, 2011). Traditional techniques tend to employ extensive knowledge of local conditions and materials and have much to add to physical mitigation efforts, as shown by the relocation of the Sanday mound complex (Graham et al., 2017; World Bank, 2017).

4.1.1 **Environmental and natural risks**

Climate change is contributing to warming the oceans, melting ice at the poles, and sea level rise. We are also witnessing changes in the chemical composition of oceans (such as acidity and salinity) (Perez-Alvaro, 2016). Moreover, currents are changing their patterns and, as a consequence, ecosystems are increasingly more endangered. However, there is a relatively low awareness of the impact of climate change on cultural heritage in comparison to natural heritage (UNESCO et al., 2010; Hall et al., 2016). Higher global surface temperatures impact some submerged heritage items whilst at the same time, sea level rise will flood many coastal areas, creating new underwater cultural heritage. Sea level change is also expected to accelerate negative coastal processes (Murphy et al., 2009); expose underwater heritage and submerge structures on land (Perez-Alvaro, 2016); and also increase disaster risks (UNESCO et al., 2010). Sea level rise in coastal areas has the potential to submerge 136 UNESCO World Heritage sites by 2100 (Perez-Alvaro, 2016). Small European islands and few coastal areas are particularly vulnerable to sea level rise. Some of them (eg. île d’Arz, Gulf of Morbihan, France) are predicted to disappear and their land and culture, both tangible and intangible, will be lost as structures submerge and people displace. Further, climate change has the potential to expose underwater cultural heritage as well as disturb stable wreck sites. Perez-Alvaro (2016) points out that underwater heritage assets, covered by coral, mud, microorganisms and sand, are preserved in a relatively stable state with near-constant cold-water temperature, low current speeds low direct sunlight. They are also more likely to avoid human disturbance than land-based structures.

Climate change risks include atmospheric moisture variation, temperature increase, sea level rise, wind, desertification, pollution or biological factors, all of which impact cultural heritage. Further, changes to wet-dry and freeze-thaw cycles are accelerating degradation, as is increased prevalence and activity of biodegrading insects and fungi (Haugen and Mattsson, 2011; Murphy et al., 2009)

For Perez-Alvaro (2016) simply monitoring cultural sites will have little effect beyond helping to understand the problem, although stronger evidence and better translation of research could be used to promote climate change awareness. He proposes a new partnership between natural and cultural resources, and the qualification of cultural heritage as a natural resource for its preservation, establishing the same common measures against climate change. The paper of Haugen and Mattsson (2011) develops climate change threats in Norway, with a view to defining them in a form that heritage managers are able to use and incorporate into their plans to take more a preventative approach. According to them, the main predicted effects of climate change are increased rain and snow, higher temperatures, increased wind loads, repeated freeze-thaw cycles, and sea-level rise. These changes will result in more frequent floods and landslides, greater snow loads on structures, frost damage from repeated freeze-thaw, greater exposure to high moisture levels and higher risk of fungi and insect infestations in wooden structures.

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Natural threats vary according to location, but climate change projections include increased rainfall, heavier storms, increased drought and more extreme temperatures all of which can threaten the structural integrity of sites as well as the artefacts themselves. Coastal erosion and flooding are critical natural threats to heritage and experts can feel that there is little to be done for some endangered coastal sites (Sesana et al., 2018). Natural disasters, such as earthquakes, flash floods, erosion or landslides, have damaged and even destroyed many heritage assets.

4.1.2 Anthropogenic Threats

Development of coastal areas for tourism or urbanisation, mismanagement and lack of regulation are the most mentioned human threats to CH in the literature. However, environmental and human threats are often interlinked. Findings from PERICLES participatory workshops and interviews emphasized this, demonstrating that these two types of risks cannot easily be separated. When focusing on human traits though, development in coastal areas, urbanisation and particularly tourism, has compounded pressures because they affect the physical capacity of wider sites, the pressure on assets and the ability of some locations to recover from intensive use (Klein, 2002). Formal monitoring and structured review processes are therefore necessary throughout the planning cycle to identify any adverse impacts of risk-reduction activities (UNESCO, 2010). This spatial concentration of (over)development alters the fundamental character of heritage, making it difficult to recover a sense of authenticity and place distinctiveness (Kocovic and Djukic, 2015).

At the same time, a number of studies has shown that adaptation measures for some threats can also have an adverse impact, potentially undermining the resilience of both tangible and intangible cultural

heritage and increasing their vulnerability to other threats (Klein 2002; UNESCO et al., 2010; Adger et al., 2013; Hall et al., 2016).

The “McDonaldisation of heritage” (Howard and Pinder, 2003, p.64) is perceived as a threat, since it encourages the reinvention of culture in a homogenised way for mass tourist consumption that endlessly reifies history, memories and artefacts. Such cloning processes reduces or even erases local expressions of identity and the capacity of a place to project a more locally rooted and authentic historic narrative. Urban and touristic development can result in the destruction of or poorly repurposed buildings; the loss of old economies, jobs and labour-based identities; neoliberal forms of urban growth and the homogenisation of the urban aesthetic (Bellandi and Santini, 2017).

This form of McDonaldisation is now a global threat in which the regeneration of former industrial areas belongs to no particular place and no particular time. Howard and Pinder (2003) suggest that the cause of this misappropriation is partly a too narrow definition of heritage, in which nature, landscape, tangible heritage and artefacts are separated out for easy narration and untimely consumption by a less critical public. This can be the case of European coastlines, where landscapes are as much cultural as they are natural. Instead, Howard and Pinder (2003) propose a holistic approach in what they call “heritage fields” concept, which calls for consideration of the whole environment as an interplay of buildings, nature, landscape, artefacts, activities (intangible heritage), sites and people.

For some authors, human threats can be avoided if more proactive planning which takes CH into account is implemented, particularly for coastlines. Such proactive planning should include all institutional, technical, financial and social barriers hindering heritage preservation and adaptation in the face of current and future climate conditions (Fatoric and Seekamp, 2017). Threats from climate change in coastal areas is often approached in isolation from other coastal changes. Klein (2002) argues that effective adaptation requires a better understanding of the vulnerability of coastal zones through an integrated conceptualisation of coastal threats. Over-development in coastal areas has reduced their resilience to other changes and unsustainable development of coastal resources have increased their vulnerability to multiple pressures.

4.2 Risk management

4.2.1 Risk management of CMCH

Risk management is the implementation of decisions regarding acceptance and control of risk, typically on the basis of cost-benefit analysis and identifies the need for action where the cost in terms of cultural heritage has negative impact on heritage values (World Bank, 2000). It entails considering all risks relative to each other to prioritise action and resources (Michalski and Pedersoli, 2016). The process involves a preparedness and a response phase (Proenca and Joao Revez, 2017) and wherever possible, the risk should be reduced as a preventative measure in the first (preparedness) stage (UNESCO et al., 2010). This not only involves mitigation and preservation strategies for heritage, but also involves building capacity of government, professionals and stakeholders in monitoring and implementing of risk reduction and response efforts (World Bank, 2017).

Michalski and Pedersoli (2016, p.101) describe the five stages of risk control in risk management as: avoid the cause of the risk; block the agents of deterioration with a protective barrier; detect the agents

of deterioration and their effects through monitoring; respond to the damage of these agents; and recover from the damage and losses to the heritage asset. They also emphasise that risk management involves a continuous process of monitoring, evaluation and altering plans. Monitoring, based on risk analysis, is essential to ensure that threats are identified before they can cause significant damage (Haugen and Mattsson, 2011). Monitoring throughout implementation is then required to evaluate and improve plans.

Many cultural heritage sites do not have a risk management plan, which may be due to a belief that events are beyond management control, the presence of competing priorities for attention, a lack of resources, or even that the vulnerability of the site is not realized until after a crises event (UNESCO, 2010). A significant risk in this respect is a disjoint between cultural heritage risk management and wider planning strategies (Klein, 2002; Khakzad et al., 2015; Hall et al., 2016) particularly when it has to do with natural heritage management plans as the two are closely interwoven (Khakzad et al., 2015; Perez-Alvaro, 2016). Khakzad et al. (2015) supports an integrated approach between cultural and natural heritage, while Perez-Alvaro (2016) goes further to propose that cultural heritage ought to be qualified a natural resource to aid its preservation.

UNESCO recommends that World Heritage sites maintain *risk preparedness plans* and ICOMOS has published Heritage at Risk (H@R) reports since 2000 (Hubbard, 2009). ICCROM was among the first institutions to propose a document on risk preparedness, applicable to World Cultural Heritage, and endorsed by UNESCO and ICOMOS. This manual was complemented in 2010 by the publication, together with UNESCO World Heritage Centre (UNESCO-WHC), of, *Managing Disaster Risks for World Heritage*, which guides site managers through the development of a disaster risk management plan. In the EU there are more concrete steps via the EU Floods Directive (Directive 2007/60/EC), which requires Member States to assess flood risk on all water courses and coast lines and to take adequate and coordinated measures to reduce this flood risk. Article 1 of Chapter I explicitly stipulates the importance of CH:

The purpose of this Directive is to establish a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the Community.

Risk management in general (not specifically in the context of CMCH) is regulated by international agreements such as the UN Sendai Framework – an international agreement that contains recommendations for risk preparedness and disaster risk reduction. This report mentions CH in passing as “cultural assets” and is understandably more focused on the more immediate loss of life, wellbeing and property. Its approach however, can still be used to analyse risk management in the field of CH (Pica, 2018). Perez-Alvaro (2016) argues that part of the problem with these directives is the lack a holistic approach to risk assessment and mitigation and proposes a new partnership between natural and cultural resources. The argument here is that CMCH should be qualified as a natural resource for its preservation, establishing the same common measures against climate change. Similarly, Aznar-Gómez (2013) argues that, although underwater cultural heritage is not treated as a natural resource by the 2001 UNESCO Convention, the seabed and sand cover are effectively archaeological objects. Moreover,

many non-sedentary fish species live around the artificial reefs made by shipwrecks so it is difficult to strictly separate these protection and management arenas.

4.2.2 Implications

There are a wide range of strategies and programmes for understanding and mitigating risk to tangible and intangible heritage. These include designations embedded in planning and environmental regulations at state or local level and supported by EU directives creating a *vertical* relationship in adaptation planning for CMCH. Each approach such as locational, physical, reconstruction or conservation has their own strengths and limitations and clearly integrated frameworks that responds to local needs and priorities are important. This *horizontal* connectivity is a theme running through the demos and one to be explored in the governance relations important within each case study.

The most significant disconnect is between natural and cultural heritage, which are especially significant at the coast where climate change is having a significant effect on the landscape and on specific sites, communities and landscape identities. Risk assessment systems, early warning measures and close site monitoring are all part of the technologies of mitigation. However, the need for a preventative approach; the involvement of communities in defining, protecting and enhancing living heritage; and better education, knowledge and skills are critical elements of a more progressive strategic approach. That is the approach PERICLES has promoted in all its case regions.

4.3 A governance understanding to guide risk assessment

Risk management has been defined as the implementation of decisions regarding the acceptance and control of risks, thus referring to taking action needed to achieving a goal. A better understanding of governance, i.e. the steering and decision-making process, is crucial to oversee threats and risks, as well as the range of possible directions to move forward. Governance can be defined as a socio-political process involved “in solving societal problems and creation societal opportunities through interactions among civil, public and private actors” (Kooiman et al 2008). This definition of governance introduced the idea of interactions between actors and systems which means more integrative processes, as it offers the possibility of more exchanges and debate around visions before reaching decisions. This definition also serves analytical and normative purposes. An analytical approach describes what different actors (state, territorial authorities, market and civil society) play a role, and scrutinizes how they do so, and which values (implicitly and explicitly) guide their interactions and form the basis of institutional set-ups. Such analysis helps to better understand questions of authority, power and legitimacy and to identify key determinants enabling and constraining effective decision-making (Stoker, 1998; Fung and Wright, 2005; Van Tatenhove, 2013). A normative approach underlines the need for this public-private interaction and points out how best it can be organised. Based on underlying societal values, a normative approach takes a predefined starting point in terms of what the societal problems to be solved are and what societal opportunities need to be created.

In literature, both participatory and deliberative modes of governance are used to foster understanding of sustainable heritage management. Both terms are sometimes viewed as similar because they refer to stakeholder involvement, democracy, rights and capabilities of those who are (to be) included in the risks assessment and management process. Generally, participatory governance has been associated with the broader shift from “government” to “governance” wherein vertical, top-down, state-led forms

of steering have been replaced and completed by networked forms of collaboration (Papadopoulos and Werin, 2007). Governance is herein promoted because stakeholders have information that helps to define trade-offs, which facilitates efficiency in the process and can lead to more effective solutions. Another reason lies in the need to have decisions based on the collective judgement and shared values of stakeholders, to create common responsibility for hard choices when necessary (Reed, 2008; Rockmann et al, 2015; Kenter et al, 2015). In these ways, participation can strengthen both output and input legitimacy (Scharpf, 2003; Papadopoulos and Warin, 2007).

This resonates well with heritage management in which governance is often value-laden (e.g. “good governance” or linked to sustainable development) and participation is celebrated as a virtue, and a right in itself. More specifically, heritage management rides the waves of the established human rights discourse, which allows for a shift from an either/or language to a more unified language to define and discuss global inequalities, justice and historic repressions (Meskell, 2010; Baird, 2010; Logan, 2014). One’s heritage can be seen as a human right that needs to be respected and protected, and forms a basis for control, access and benefits (whether social, economic, spiritual) (Meskell, 2010).

In deliberative governance, public or wider (deliberative) discussion itself considered a virtue, that leads to more reflected, shared and meaningful choices. Deliberation is about reviewing and rethinking collaborative or participatory governance approaches based on critics, for example that equal participation may not necessary equalise power relations. Also, another question relates to whether citizens are really interested in many different kinds of decisions? (Allmendinger, 2009). Further, a deliberative process is not a simple bargaining process, rather it is a matter of persuasion, argumentation and construction of a new legitimacy across differences (Escobar, 2017). Deliberation is concerned with careful thought, consideration and discussion, and hence it can be argued that deliberative governance would then be concerned with a strategic approach to participation, involvement, consultation, advice, debate and discussion. As such stakeholders’ involvement in deliberative governance is not so much about equal representation and obstacles to inclusion. it is more a matter of the ‘throughput’ dimension of policy making (Papadopoulos, 2007, Schmitt, 2013). Social learning constitutes a main aspect of both modes of governance presented above because participation and deliberation do not necessarily equate to a clear strategy or consensus (Fatoric et al, 2013; Walsh, 2019). Many tools can be used to realize participatory or deliberative risks assessment and management and open the space to tangible and intangible cultural heritage to local communities and bring their voices into visibility. In PERICLES some of the tools used in project participatory workshops included visual material (photos), interviews, storytelling, etc.

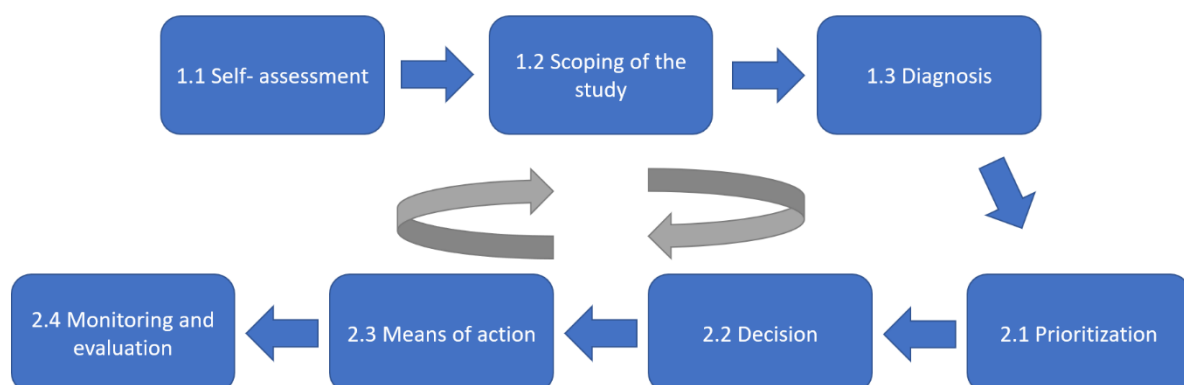
5 PERICLES framework risk assessment and sustainable management and use of CMCH

Within PERICLES, the project partners have developed a risk assessment framework in which participation and deliberation is embedded. D4.3 presents the draft framework, and provides the full account. In this section, only the general cycle of risk assessment will be presented as well the different steps that should be followed implementation (for more detail, see D4.3).

A risk assessment framework is part of a management strategy, to identify, address, reduce and or eliminate potential threats. A risk assessment allows for sharing information about risks and relates to the coordination of a management process. Management of risks is the implementation of decision regarding acceptance and control of risk, typically on the basis of cost-benefit analysis and identifies the need for action where the costs in terms of CH had negative impact on heritage values (World Bank, 2000). It entails considering all risks relative to each other to prioritise actions and resources (Michalski and Persoli, 2016). The process involves a preparedness and response phases (Proenca and Revez, 2017) and wherever possible the risk should be reduced as preventive measure in the first stage (preparedness) (UNESCO, 2010). This not only involves mitigation and preservation strategies for heritage, but also building the capacity of government, professionals and stakeholders in monitoring and implementing of risk reduction and responses efforts (World Bank, 2017). A risk assessment framework should include guidelines to identify the key actors it should facilitate prioritization of risk and defining related management measures.

5.1 *PERICLES participatory risks assessment framework shortly explained*

The draft PERICLES participatory risk assessment framework for sustainable development conservation and use of coastal land maritime cultural heritage (CMCH), was developed in line with a general risk assessment approach outline above and consists of several distinctive steps (Figure 1). It has however two distinctive characteristics. First, it puts emphasis on risks on CMCH and employs a particular understanding of risks (as discussed in section 4). Second, participation of stakeholders is at the core. Participation is based on the involvement of a large range of actors concerned with CMCH. The emphasis on participation has lead us to develop a “two layer” framework. The first layer actions (1.1-1.3) are included with the objective to ensure that participation is anchored in the assessment methodology itself through the need to define who and how should participate. It is important to be aware of social dynamics and context of the case and understand the processes behind risk and mitigation strategies. These considerations are included to guide the user to find appropriate approaches when developing a participatory assessment of the risk and management of CMCH. The second layer is necessary when CMCH management is viewed as an inherently social process that is not straightforward, shown in Figure 1 by the grey arrows representing iterative loops.



Flowchart of the methodological steps for the PERICLES participatory risk assessment framework (derived from D4.3).

5.1.1 Description of the framework step-by-step

The aim of the first phase is to gather information for a deeper understanding of the risks in relation to the CMCH in question and the social and political context and dynamics in the area, region or country. The first phase of the framework is a reflexive data collection process in which different methods and tools can be applied. It unfolds in three different steps: self-assessment, scope and diagnosis.

1.1 Self-Assessment

This step aims to acknowledge biases and assumptions and become aware of the actual level of knowledge of the case in question. Different knowledge should be used to articulate further epistemological positioning. Following discussions among PERICLES partners this step was considered to not be necessary. However, in instance where is necessary, this step should be applied as it provides a good starting point for assessor before collecting more information and being involved in subsequent participatory processes.

1.2 Scoping of the study

In this step, the aim is to explore and study the global context and identify all relevant data sources available. Different tools, methods and information should be employed in this step, for example, a desk-based inventory to identify information gaps, defining existing pressures and their dynamics, and identifying relevant institutions and regulations related to CMCH. Different methods can be used according to the competence of the experts, scientists, decision makers or citizens running the study. Bottom-up approaches can be used in this step as a way of reaching the communities of meaning and facilitating early participation.

1.3 Diagnosis

All information obtained in the previous steps is compiled to elaborate a diagnosis of the risks, value of the heritage, and people's values in cooperation with stakeholders. A participatory approach is necessary in this step to include all types of knowledge and to identify social dynamics and diverse interests. During the analysis and evaluation, a selection of heritage considered to be at risk might emerge that may require further specific discussion. Different approaches are available and can be chosen according to the region, case, disciplinary focus or methodological preference of the assessor. But, we emphasize that risks should be co-identified with stakeholders by using participatory or deliberative approaches.

The second phase is the participatory approach for risk assessment, conservation and use of CMCH. Once, the heritage elements and values are identified (phase 1), the second phase will guide the assessors in manage and using the heritage at risk. Participation is required in all the constituent steps of this phase which are: prioritization, decision, definition of means of action-adaptation and resilience, and monitoring and evaluation.

2.1 Prioritization

The aim here is to prioritize the risk mitigation actions identified for implementation. Different qualitative methods can be used to facilitate exchanges between participants and stakeholders (e.g., interviews, focus groups, workshops) and to construct decisions (e.g., mind maps, scenarios, serious game). For example, in the case of Gulf of Morbihan, the use of Cactus tool which was developed by the

regional marine natural park of the gulf of Morbihan to support authorities in risk management was used. In Galway example visual material (photos) support exchanges between stakeholders.

2.2. Decision

This stage addresses the decision-making process. However, it is possible that the identification of risk and heritage requiring intervention does not immediately result in a concrete decision or any related action. This can be because there is a lack of required resources, lack of clarity or agreement on the future use of the heritage elements or indeed a lack of clarity on who can or is responsible for making a final decision. For example, in the case of tangible CMCH it can be useful to have relevant authorities with access to funding on board.

2.3 Means of action, adaptation and resilience

Actions to remediate risks require reflection on the financial, technical, human, and regulatory means available to implement the management decision as defined in the previous step. The identification of means enables the implementation of appropriate management scenarios. The management scenarios can differ according to the CH elements involved and can include: preservation, maintenance, restoration, rehabilitation, or accepted loss following the recording and preservation of the history of the element. For example, following the decision to preserve and rehabilitate the old light house at Locmariaquer (F), public funds were found by the municipality. The old building is now a sailing school and is managed by a board.

It does happen that citizens' associations or groups act for the preservation of their intangible heritage without public support, at least at the beginning. For example, in the preservation of the know-how of construction or rehabilitation of old boats. It is the case of "Forban" boats at Bono municipality used in the past for fishing, or the "plates" boats used for shellfish farming in Gulf of Morbihan France. Similarly, in Aveiro, Portugal, the old boats used for seaweed harvesting *moliceiros*, or to transport people, *mercantéis*, are now used for touristic purposes. In Malta, fishers still use the traditional colourful wooden boats and in so doing, contribute to the preservation of this heritage.

2.4 Monitoring and evaluation

As in other policy processes, monitoring and evaluation are important to understand if developed actions are in tandem with the initial objectives. Monitoring refers to gathering data and information that will be useful for an in-depth investigation of each activity, and in assessing whether it was helpful in achieving the aims. Monitoring of activities to mitigate or eliminate risks for CMCH elements can be done with the use of different tools such as observatories, crowdsourcing, social media data mining and interviews, etc.

5.1.2 Implementation of the PERICLES participatory risks assessment framework

This sub-section presents the ways in which the different steps played out in the different case regions. It must again be noted that the testing and application of the framework has been hampered by the COVID-19 situation. Thus these illustrations of the framework use represent a retrospective view by the PERICLES partners on the ways the different steps outlined above in risk assessment were employed within the demos. The following sub-sections describe five case regions.

The North-east Aegean coastal zone, Greece

Emphasis in the case study region, the NE Aegean coastal zone, has been on the steps in the first phase of the risk assessment framework. Partners used semi-structured interviews with fishers and marine scientists at several locations and bibliographic research on traditional (pre-1980) fishing tools and methods in Greece. The NE Aegean coastal zone covers the area extending from Strymon River to Evros River and includes the islands of Thassos and Samothrace. Some major cities are located in this zone (e.g. Kavala, Alexandroupolis) as are some industrial areas. Most of the coastal zone however is rural and agricultural. The largest part of this area is included in the National Park of Eastern Macedonia and Thrace which unifies extensive systems of lagoons and coastal wetlands that had individually been declared as Special Protection Areas and (SPA) and Special Areas for Conservation (SAC) in the past. The NE Aegean is one of the richest fishing grounds in Greece.

The *self-assessment* of the level of knowledge of the Greek PERICLES team was done in the early stages of PERICLES work and was based on their previous research experience (fishing ethnography, anthropology, fisheries) and on bibliographic research and compilation of an annotated bibliography on the relevant published material. *Scoping* of the context and definition of risks, heritage at stake, actors and legal frameworks, was based on a large number of semi-structured interviews performed with fishermen and marine scientists. Also demonstrations of key traditional fishing activities, which are now on the verge of abandonment, were filmed and discussed in depth.

This led to the understanding that the main cultural heritage at risk is that fishing knowledge and skills of small scale coastal fisheries will disappear (*prioritization*). Small-scale coastal fisheries in Greece and NE Aegean more specifically are targeting multi-species fish populations, which have been traditionally exploited by a distinct variety of fishing methods/tools, including tricks and strategies that are of an intangible nature (e.g. Μαρσέλος 1948). The success of this type of fishing was based on traditional ecological and empirical knowledge on the part of the fishers and on a rather diverse toolkit. The intergenerational transmission of this knowledge was achieved by apprenticeship of youngsters and their inclusion in established fishing groups.

Small-scale coastal fishing has experienced a profound transformation in the last decades. Coastal fishermen are now using a very restricted number of fishing tools and technology to navigate and find fishing places. Also, they know and target only few species for which there is a high market demand. In many cases they do not built or even repair their nets themselves. The younger fishermen, who are fewer than in the past, have limited traditional ecological knowledge (eg. fish ethology, suitable nets and baits, special ways of catching different types of fish and tools that are not in use any more).

Financially small coastal fishermen are struggling, thus many avoid further investment in fishing and turn to alternative occupations, such as agriculture or tourism. EU regulations that aim to decrease of fishing effort and decrease pressure on fishing stocks have a detrimental effect on this type of fishing and the knowledge it involves. For instance, the EU subsidized destruction of the wooden fishing vessels that is still in progress, affects this type of fishing more than others as most of the open sea fishing vessels had already been replaced by metal ones before this program started. Regulations on the mandatory use of only a limited number of fishing tools (1-2) by each fisherman places similar pressures on traditional ecological and empirical fishing knowledge. An ageing fisher population and lack of replacement, absence of fishing schools, immense economic pressures in the context of the 2008 economic crisis and

globalization are some more factors that place fishing knowledge and skills of small-scale coastal fisheries at serious risk

West coast of Ireland, Republic of Ireland

In the case study region of the west coast of Ireland, the risk assessment was used in a broad sense to guide the cases, following the steps: *scoping, diagnosis, and prioritization* using the tools of photo elicitation, interviews, and risk assessment workshops

The Galway Bay and Killary Harbour cases examined the positive and negative interactions between coastal cultural heritage and emerging Blue Growth activities. While they are both located on the coast of Connemara facing the Atlantic Ocean on the west of Ireland, they are situated within significantly different landscapes both from a geomorphological and socio-economic perspective. Galway Bay is a large bay, while Killary Harbour is a 16-km fjord-like inlet comprising a deep, U-shaped glacial valley, the floor of which has been drowned by the sea. Both cases, however, contain iconic landscapes and seascapes and a strong coastal and maritime heritage linked to Irish identity. More specifically, the bay and fjord contain heritage assets (designated and protected), such as: (a) coastal and maritime cultural practices (e.g. traditional boat building, fishing, stonewall building); (b) historic architectural monuments (e.g. piers, bridges, shipwrecks, lighthouses, watchtowers, castles, manors, lodges, churches, thatched cottages); (c) prehistoric archaeological sites (e.g. megalithic tombs and burial grounds, holy wells); (d) a distinctive Irish identity as they form a large part of the Galway Gaeltacht (Irish speaking areas with statutory recognition).

The coastal heritage of the bay and fjord features strongly in the coastal tourism strategies for the west coast of Ireland. In recent years, however, the bay has been identified as a key site for Ireland's Blue Growth strategy (Harnessing our Ocean Wealth 2012), with aquaculture and renewable energy developments being proposed, while Killary Harbour has traditionally been a site for aquaculture development (rope mussel and salmon), fisheries and farming. The emergence of new Blue Growth industries, and an increase in tourism due to the promotion of the *Wild Atlantic Way* (WAW), has resulted in pressures and conflict with local communities arguing that these developments threaten their unique tangible and intangible cultural heritage. Notably, only part of Galway Bay (outside the case example) is designated as a Ramsar and a Special Protection Area (Inner Galway Bay SPA), whereas only the mouth of Killary Harbour (outside the case example) is designated as Special Area of Conservation (West Connacht Coast SAC).

Two coastal settlements were considered as appropriate case studies due to their contested nature: An Spidéal (Spiddal, in English), overlooking Galway Bay; and Leenaun (Leenane, in English) situated on the head of Killary Harbour. Both are located on the Wild Atlantic Way (WAW) and are connected with other Blue Growth developments, especially fishing and aquaculture. An Spidéal is the proposed location for the deployment of a sub-sea ocean renewables test site in Galway Bay in 2015, which was opposed by local communities. Leenane is a prominent location for seafood production, with extensive mussel farms and salmon aquaculture, and an upcoming coastal and marine tourism sector (with two aqua sports adventure centres, fishing lodges, Killary fjord boat tours and the WAW).

Using the framework assessment framework, the threats identified by participants are risks to both tangible and intangible heritage. Tangible heritage is at risk from climate change and other environmental risks and from poor or weak governance. The tangible heritage at risk includes historic

buildings, piers etc. There is growing community concern about the individual and cumulative effects of Blue Growth activities on both tangible heritage (e.g. historic monuments) and intangible heritage (e.g. the Irish language). Blue Growth in this instance includes intensified tourism, aquaculture, renewable energy and other smart technology (e.g. the SmartBay subsea observatory). While The Wild Atlantic Way tourism strategy has been a boon to some coastal areas, it is viewed as creating unintended negative impacts on other areas (e.g. by distorting the local housing market and therefore contributing to coastal depopulation). The proposal to develop Europe's largest offshore Salmon farm in the lee of the Aran islands was met with widespread protest and resistance from the islanders. The protest against the fish farm was bound up in the cultural identity of the islands, including a march that carried a traditional boat through Galway city. Similar conflict is evident in other parts of the bay. For example, a marine energy test site off the coast of Spiddal was objected to by locals, who viewed the development as transforming the natural heritage of the area.

Vilsund, Denmark

In the case of Vilsund (Denmark), the risk assessment framework was also not used explicitly in communication with the stakeholders, but as an underlying frame for posing initial questions to stakeholders and in designing the participatory and deliberative set up together with key stakeholders in the area. While most emphasis is on *prioritization*, it shows particularly well the '*iterative loops*' and how the framework would benefit from not being seen as a linear process.

Vilsund is a sound in the Limfjord, a fjord in northwest Denmark. There is a village on each side of the sound, two communities ('Vilsund Vest' and 'Sundby Mors') with 400-500 citizens in each, altogether around 900 citizens. There is a bridge across the sound, the Vilsund bridge (382 m), which connects the two communities. The demographics of the area is somewhat typical for rural areas; young people leave for education and work in cities and older generations are left in the area. The area has natural beauty, with varied coasts, hills and an interesting geology. Maritime activities have shifted from fisheries and transport of goods in previous times to today's recreation and tourism purposes. Compared to other villages in the region, the area has an above average business activity and number of jobs.

Despite a shared geography and shared development issues and problems across the sound, the sound is also a municipal border, with Thisted Municipality to the west and Morsø Municipality to the east. Together, the two communities seem to have a shared interest in increased collaboration across the sound

In the Vilsund case, there were hardly any tangible aspects at risk the bridge is in rather good shape and is maintained by the state; and the shipyard buildings are newly renovated. However, a significant intangible risk is *loss of meaning* associated with the centuries-old role of Vilsund as a 'meeting place'. A change in meaning concerning the use of the water/the Fjord is currently taking place, from transportation and business towards sports and recreation and there is insecurity and flexibility among locals as to how much history 'should count' in this transformation.

Here, a specific challenge is to work across the municipal border, between the two municipalities and two museum districts, in order to inspire an increased shared understanding and create coordinated development in the area.

Small Isles on the west coast of Scotland, UK

The small isles are the islands of Rum, Eigg, Canna and Muck on the west coast of Scotland. In this case region, the framework was used to structure an online workshop focusing mainly on the stages of *diagnosis* and *prioritization*.

Although *self-assessment* was not done formally or as an explicitly identified step, efforts were made to address gaps in knowledge about the islands and their history and heritage at the start of the demo work. The islands see themselves as quite different to each other although they share similar values and a similar way of life shaped by living on small, remote islands. *Scoping* was initially done through desk-based research and then through a series of 10 interviews with residents and other stakeholders. A pre-workshop questionnaire was also used in part as a scoping tool to include the workshop participants who had not previously been interviewed.

Emphasis has been on *diagnosis*, which was included in the interviews, through the pre-workshop questionnaire and in one part of the workshop. *Prioritisation* was a specific objective of the workshop, intended to identify actions that can be taken to address the issues raised in the interviews and in the pre-workshop questionnaire. Actions were defined in terms of what participants could do themselves, actions that required more support (e.g. funding), and actions that required formal support (e.g. permits). Many of the actions identified were not specific to heritage objects but were about the broader island issues that heritage is wrapped up in. The *Decision*-step was addressed briefly in the workshop, as were the *means of action*. *Monitoring and evaluation* was beyond the scope of what was possible to do in the project time-frame.

The risks identified as being most likely and with the highest impact were: 1) erosion and weathering, 2) lack of support, 3) loss of people and knowledge (all three had the same scoring); followed by 4) inappropriate governance and 5) increased tourism. Some other tangible risks were identified including pests as there is a rat problem on some of the islands. Participants saw their heritage as the remains of the past but also very much as their current way of life. Other risks that were identified in the workshop that could be linked to ownership tensions were: 1) questions as to who has ownership of the heritage, 2) ownership was located elsewhere which linked to a concern that external people were setting priorities without engaging with the community; and 3) worries about misappropriation. Other commonly identified risks were the lack of will or time to act – island life is busy and very hands-on so heritage is not a high priority. A lack of knowledge about what the heritage of an island is was also raised as unknown heritage could be missed and lost. Importantly, the risks, identified via the participatory workshop with community members, were different from previously identified risks on the basis of literature review (as was the case in Portugal, see D4.2).

Region of Aveiro, Portugal

In the case region of Aveiro, Portugal, the different activities can be characterized according to the different steps of the risk assessment framework: *scoping*, *diagnosis*, and, *prioritization*.

The Ria de Aveiro is a 45 km long and 10 km wide shallow coastal lagoon, located in the central region of Portugal and connected to the Atlantic Ocean by a single inlet (Dias and Lopes, 2006). Due to the great diversity in habitats and bird species, Ria de Aveiro is classified as Site of Community Importance (SCI) and Special Protection Area (SPA), integrating the Natura 2000 Network. The history, culture and socio-

economic context of the Ria de Aveiro region is strongly influenced by its proximity to the sea and by the presence of the coastal lagoon, which was used in the past as the main communication route and where important economic activities took place, such as fishing, seaweed gathering and salt production.

Scoping has been performed through an inventory of threats through a desk based analysis (Annex III of D4.1) leading to the identification of the impacts on CH and local implications of environmental and human induced threats; and to the identification of the main risk management strategies and practices in place. This list was then narrowed to better fit the case region. Environmental threats such as climate change (namely sea-level rise, coastal erosion and flooding), storm damage, weathering and erosion are perceived as high risk to CMCH in the Ria de Aveiro region. For example, the coastal lagoon is already very exposed to flooding, with salinization of agricultural fields as side effect, which will probably be exacerbated by climate change.

Face-to-face in-depth interviews (see also D4.2) showcase *diagnosis* as well as *prioritization*, as stakeholders were asked to rank the threats according to their level of risk (no-risk, low, moderate, or high risk) which also allowed an understanding of what stakeholders perceive as CH and which CMCH in the case region is most relevant to them. For example, most human induced threats were perceived as moderate risk, apart from governance that was considered as high risk. Weak governance related to several factors, among which is the wide range of entities with overlapping responsibilities and management instruments. High risk threats were further discussed in the workshop (see also D4.2) and opportunities and actions to achieve a desirable future were also discussed, such as the creation of a single management entity for Ria de Aveiro.

6 PERICLES and COVID-19 through a risk assessment lenses

on the PERICLES project by using a risk assessment lens focusing on challenges and the mitigation measures employed.

A main challenge faced within the seven PERICLES cases regions (Greece, Portugal, Estonia, Ireland, Scotland, France, Malta, The Netherlands and Denmark) was the cancellation of all face-to-face interviews and workshops during the first lockdown in 2020 (mid-March to mid-June) as in all countries physical meetings were forbidden. Even if meetings were allowed, reasons for cancellations were that the PERICLES partners wanted to take a precautionary approach, as not to run the risk of transmitting the virus to the interviewees, sometimes elderly and vulnerable groups, and in parallel, some interviewees refused to receive outsiders to their home. Partners working with schools faced the problem that, for many months, schools were closed and were not easy to access when they did open (for example in the North Aegean and in Denmark). However, in France, when schools opened, they were inviting engagement, and the PNRGM could complete the work on *Aires Marines Educatives* undertaken at Crac'h primary school. Festivals or other events planned by municipalities or associations were also cancelled, meaning that partners who were to be involved in these activities were not able to complete associated work in the manner intended.

During summer 2020, there was been some possibility to travel, and some teams were able to hold a participatory workshop (e.g., Denmark) but this was not possible for all teams, particularly in areas

where stakeholders were busy due to the touristic period and needed to focus their time and attention elsewhere.

It can be said that in all case regions areas COVID 19 negatively impacted the activities of all partners. It should be underlined that the pandemic paralysed the participatory process built by PERICLES during the two first years. In some cases, at crucial points after considerable deliberation of the initiatives and actions taken, the final implementation of the actions came to a stop (e.g. Malta). A key challenge was of course the overall lack of understanding of a pandemic risk. Nobody, including the PERICLES partners, foresaw the impact on any of the demos. For future work, a pandemic will have to be included in the risk assessment framework. Another main challenge was to provide follow-up for participants to keep the momentum of the working environment and the demos.

From the very start, PERICLES partners have tried to think of mitigating measures. In almost all the case study regions, events were re-planned or partly postponed when possible, but for example, in the case of Estonia it is still impossible to make any new plans. Mitigation measures have relied heavily on using online tools.

Virtual workshops, focus groups and face-to-face interviews, through zoom or other communication tools, were organised to mitigate this unexpected threat (eg. Portugal, Malta, Scotland). Webinars were also organised (including on the project level). These virtual and digital tools enlarge our outreach to an audience of people who we may have otherwise not engaged with. Despite this positive impact, it must be underlined that many stakeholders do have difficulty in using digital technology and tools. It appears that there are social categories of European citizens who don't have access to such technology because they don't have internet or computers or laptops and even good quality internet connections. For many European citizens' mobiles phones are the main communication tool without always giving access to internet. Elderly people in particular are the main social group excluded by use of digital technologies.

Another interesting strategy to mitigate the impact of COVID 19 to the project work had been the publication of a newsletter in France. This monthly newsletter informs the French network on the progress of the project at national and case regions levels. It develops definitions, concepts and others issues related to CH necessary for capacity building.

7 Conclusion

This report seeks to assist researchers and relevant public, private and associated actors who are willing to integrate participatory methods in the identification and assessment of risks to tangible and intangible heritage. The use of participatory approaches will contribute to the inclusion of a range of stakeholders, currently excluded or marginalized, to the heritage debate which remains concentrated in the hands of the experts, either in the field of CH or risk management, or both. The participation of civil society actors in the debate concerning heritage and its preservation will allow better diagnoses and enable prioritization of the risks, but will also facilitate decisions about which heritage to maintain, how to act and how to manage it. Finally, participation helps legitimate decisions and guarantees a better investment of citizens and inhabitants to the preservation of the local cultural heritage. This risk assessment framework, consisting of two phases, can be applied as the complete framework, or in part. This has been demonstrated during its implementation in the field by the different PERICLES teams, although application by others is still untested. But, we found that the framework can also serve as a basis for opening up discussions during the participatory workshops or be accompanied by the multitude of different methodological tools used. The testing of this analytical framework on pandemics, a risk not taken into account at the start of our project, allows us to identify the obstacles faced by all research

teams needing to meet people and organise workshops, but also the new opportunities it has created, mainly through the use of new technologies. At the same time, it highlights the enhanced risk of not being able to include certain social classes or categories who do not master such tools.

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ANNEX 1: Template for the case study

Case	
Basic info	
Short description risk and CH	
Short description current governance / management	
Use Risk Assessment framework	
Tools used	
lessons	
...??	